Project Title:

Global Electronics Retailer – End-to-End Business Intelligence Solution

Project Description:

This project involved building a complete Business Intelligence solution for a Global Electronics Retailer, a company that operated across three continents between 2016 and 2021. The objective was to analyze historical data, uncover business insights, and develop advanced tools to support decision-making.

Data Source:

Multiple CSV files containing sales, customers, products, and regional information.
Time range: 2016 – 2021.

Data Understanding & Modeling:

ERD & Mapping:

Designed the Entity Relationship Diagram (ERD) and mapping after deeply analyzing and understanding the raw data.

OLTP Database:

- Implemented database schema based on the ERD.
- Loaded data from CSV files into OLTP using **SSIS**, structured into 3 containers (Reference Data - - Master Data – Transactions).
- Developed **Views, Stored** Procedures**, and Triggers** to support business operations.

Data Warehouse (DWH):

- Designed a **Star Schema** for analytics.
- Migrated data from OLTP to DWH using **SSIS ETL**.

Cubes (SSAS):

- Built OLAP cubes to enable multidimensional analysis and advanced querying.

Reports (SSRS):

- Created paginated reports tailored for detailed reporting needs.

Visualization & Dashboards:

Power BI:

- Sales performance dashboards.
- **Pareto Analysis** to identify the "vital few" products and customers driving most of the revenue.
- Trend analysis over time and across continents.

Tableau:

Interactive dashboards comparing regional and product performance over years.
Geographical sales analysis and growth vs. decline trends over years.

Advanced Analytics:

AI Product Search System:

- Implemented advanced product search with **AI-powered recommendations** using **Grog's Llama 33 70B** model.
- Enabled intelligent recommendations to enhance customer experience and support business decisions.

Highlighted Insights:

- Identified best and worst-performing products, categories, and territories.
- Discovered key factors behind business performance between 2016–2021.
- Demonstrated the importance of data-driven decision-making in retail.

Skills Used:

- Database Design (OLTP & DWH)
- ERD & Data Mapping
- ETL with SSIS (Reference, Master, Transactions Containers)
- Views, Stored Procedures & Triggers
- Star Schema Modeling
- SSAS Cubes
- SSRS Reports
- Power BI & Tableau Dashboards
- Pareto Analysis
- AI-powered Product Search (Llama 33 70B)
- Business Intelligence Lifecycle
- KPI Analysis & Data Visualization